

IN THE CLAIMS:

~~Patent claims.~~ CLAIMS:

1. (Currently Amended) The use of a nucleic acid ~~(1)~~ for detecting an explosive ~~(2)~~, wherein the nucleic acid ~~(1)~~ specifically binds to a partial molecular structure ~~(3)~~ or the overall molecular structure of the explosive ~~(2)~~, and wherein a binding event between the partial molecular structure ~~(3)~~ or the overall molecular structure and the nucleic acid ~~(1)~~ is detected.

2. (Currently Amended) The use according to claim 1, wherein the partial molecular structure ~~(3)~~ carries available oxygen directly bound to a nitrogen atom or to several nitrogen atoms.

3. (Currently Amended) The use according to claim 2, wherein the partial molecular structure ~~(3)~~ is selected from the group consisting of ~~[["]]~~ nitrites, nitrates, nitro and nitroso compounds ~~[["]]~~.

4. (Currently Amended) The use according to ~~one of claims 1 to 3~~ claim 1, wherein the explosive is selected from the group consisting of ~~[["]]~~ nitrobenzol derivatives, TNT, 2,4-DNT, 2,6-DNT, 2-NT, picric acid, hexogen, octogen, hexyl, tetryl, ethylene glycol dinitrate, diethylene glycol dinitrate, nitroglycerin, nitropenta and derivatives of such compounds ~~[["]]~~.

5. (Currently Amended) The use according to ~~one of claims 1 to 4~~ claim 1, wherein the nucleic acid ~~(1)~~ is selected from the group consisting of ~~[["]]~~ sequences of Figs. 8 and 9 or any fragments of these sequences having a length of at least 6, in particular at least 10 nucleotides. ~~[["]]~~

6. (Currently Amended) The use according to ~~one of claims 1 to 5~~ claim 1, wherein a binding event is detected by measurement of a signal of a detector molecule ~~(5)~~ being marked, in particular fluorescence-marked ~~(4)~~ and competitively replaced in the binding to the nucleic acid ~~(1)~~ by a molecule of the explosive ~~(2)~~.

7. (Currently Amended) The use according to ~~one of claims 1 to 6~~ claim 1, wherein the nucleic acid ~~(1)~~, as an option by a spacer compound ~~(6)~~, is immobilized at a solid body surface ~~(7)~~, in particular the surface of an optic fiber ~~(8)~~.

8. (Currently Amended) The use according to ~~claim 6 or 7~~ claim 6, wherein the signal is generated by decrease or increase of the signal intensity of bound detector molecules ~~(5)~~.

9. (Currently Amended) The use according to ~~one of claims 6 to 8~~ claim 6, wherein the signal is generated by increase of the signal intensity of released detector molecules ~~(5)~~.

10. (Currently Amended) A nucleic acid ~~(1)~~ for use according to ~~one of claims 1 to 9~~ claim 1 according to one of the sequences of Figs. 8 and 9 or any fragments of these sequences having a length of at least 6, in particular at least 10 nucleotides.

11. (Currently Amended) A device for detecting an explosive ~~(2)~~ with a nucleic acid ~~(1)~~ being specific for a partial molecular structure ~~(3)~~ of the explosive ~~(2)~~, preferably immobilized at a solid body surface ~~(7)~~, comprising means for detecting a binding event ~~(9)~~ between the partial molecular structure ~~(3)~~ and the nucleic acid ~~(1)~~ and comprising means for feeding a sample ~~(10)~~ to the nucleic acid ~~(1)~~.

12. (Currently Amended) A device according to claim 11, wherein the nucleic acid ~~(1)~~ is immobilized by a spacer compound ~~(6)~~ at an optic fiber ~~(8)~~, wherein the nucleic acid ~~(1)~~ is loaded with a fluorescence-marked ~~(4)~~ detector molecule—~~(5)~~, wherein the binding force nucleic acid ~~(1)~~/detector molecule ~~(5)~~ is lower than the binding force nucleic acid ~~(1)~~/partial molecular structure—~~(3)~~, wherein a light source ~~(11)~~ for the fluorescence excitation of the detector molecules ~~(5)~~ is provided, wherein the optic fiber ~~(8)~~ is connected to a fluorescence detector ~~(9)~~, and wherein at least a part of the optic fiber ~~(8)~~ is arranged in a sample gas or liquid space ~~(12)~~, ~~whereinto~~ into which a gas or liquid sample ~~(13)~~ can be supplied.